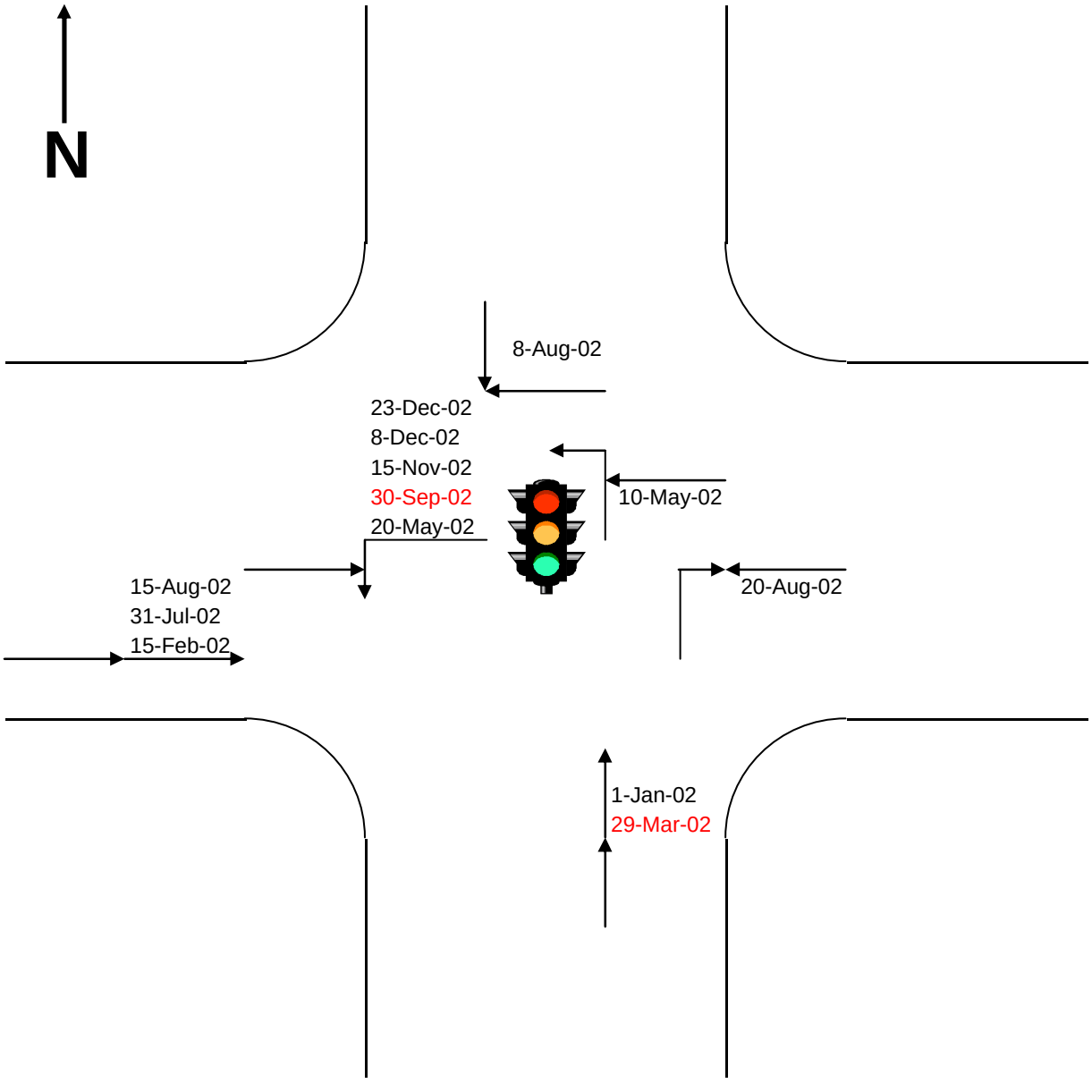
2004 Intersection Improvement Priorities

Priority	Intersection	Estimated Cost	Rank by Crash Rate	Rank by Warrants Met	Rank by Volume	Overall Rank
1	Harvard Road & Wakarusa Drive(b)(c)	$550,000	4	1	2	1
2	Inverness/Legends & Wakarusa(b)	$550,000	3	3	5	2
3	15th Street & Wakarusa Drive(c)	$200,000	10	2	1	3
4	15th Street & Engel Road(b)(d)	$550,000	2	7	6	4
5	Harvard Road & Kasold Drive(b)(c)	$550,000	5	9	4	5
6	McDonald Dr & Rockledge Rd(a)(b)	$750,000	7	5	7	6
7	Kasold Drive & Peterson Road(b)	$750,000	1	8	11	7
8	31st Street & Louisiana Street(b)(c)	$550,000	11	5	3	7
9	31st Street & Haskell Avenue(b)(c)	$550,000	9	4	10	9
10	11th Street & Connecticut St(b)(c)	$550,000	6	11	8	10
11	27th Street & Haskell Avenue(b)	$550,000	8	10	9	11
12						
13						

8/6/2004

City of Lawrence, Kansas
Traffic Engineering Division
Crash Diagram

Location: **19th Street & Louisiana Street** Date: **2002**



Notes: Red indicates INJURY crash

2002 cost of crashes based on state-wide averages = $329,150

RESOLUTION NO 6478

A RESOLUTION OF THE CITY OF LAWRENCE KANSAS ORDERING THE IMPROVEMENT AND AUTHORIZING THE ISSUANCE OF GENERAL OBLIGATION BONDS FOR CERTAIN MAIN TRAFFICWAY IMPROVEMENTS WITHIN THE CITY OF LAWRENCE KANSAS

BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF LAWRENCE KANSAS

Section 1 The Governing Body hereby finds that the following designated streets or portions thereof have been designated a major or main Trafficway within the City of Lawrence Kansas pursuant to K S A 12-685 (Code of the City of Lawrence Kansas Section 17-501 et seq) and amendments thereto

6th Street and Lawrence Avenue
19th Street and Louisiana Street

Section 2 The estimated cost for the improvements on the streets and intersections described in Section 1 is $250 000 not including issuance and interest costs for said improvements The cost of the improvements shall be paid from all lawful sources including the issuance of General Obligation Bonds pursuant to K S A 12 685 et seq and other lawful authority Said estimated cost as above set forth is hereby increased at the pro rata rate of 1 percent per month from and after the adoption date of this Resolution exclusive of the costs of temporary financing

Section 3 The City expects to design and construct and to make additional capital expenditures on and after the date of adoption of this resolution in connection with the improvements set forth in this resolution and the City intends to reimburse itself for such expenditures with the proceeds of the bonds and/or notes in the maximum principal amount of $250 000

Adopted on this 22nd day of July 2003

David M Dunfield Mayor

ATTEST

Frank S Reeb City Clerk

June 27, 2000 City Commission meeting minutes (Louisiana Traffic Calming)

Aaron Bartlett, Planner, presented the revised final report on the Louisiana Traffic Calming Study. There were six (6) questions raised concerning this study. The first questions was the process that lead up to the selection of modern roundabouts, pedestrian median diverts, bike lanes, sidewalks, other capital improvements and how would each investment address traffic calming concerns. From the study that was done, the public identified five (5) main priorities of concern:

1. High speed
2. High volume of traffic in peak hours
3. Bicycle safety and bicycle routes along Louisiana Street
4. Sidewalks on one side only
5. Difficulty to cross the street

In the speed study that was done the 85-percentile speed was 32 mph. He said the speed limit was 30 mph, which was 2 mph difference and was not considered a problem from a transportation or engineering prospective.

Traffic Volume on Louisiana Street was classified as a minor arterial, which was typical for that type of street. What was untypical, was the schools and residential surroundings. City staff was looking at suggestions that would not reduce the amount of traffic, but make the corridor safer.

Bicycle safety was looked at to see if it would be appropriate to have bike lanes with an arterial street, there were certain American Association of State Highway and Transportation Official Standards (AASHTO) that needed to be met. The study looked at eleven foot (11') lanes with four foot (4') bike lanes, which included part of the gutter. AASHTO requires at least one foot (1') for that gutter. On a minor arterial the City could not go below eleven foot (11') travel lanes. The best alternative was to

remove parking on the remaining parts of Louisiana and open it up to a fourteen foot (14') wide travel lane. Pedestrian traffic was high along this corridor due to the number of public schools. The plan for pedestrian safety was adding sidewalks from 19th Street to Park Hill Terrace, a roundabout at 27th Terrace schools entrance, median treatment between 20th Street and 21st Street and 25th Street and Utah, roundabout at 17th Street and median treatment between 22nd Street and Geever, roundabout at 19th Street and Naismith Drive, roundabout at 19th Street, roundabout at Checkers mall entrance, roundabout at 27th Street and median treatment between 20th Street and 19th Street.

The second question was what other studies were available which demonstrates that modern roundabout were safer than conventional four (4) way stops or traffic signal controlled intersections. Evidence indicated that modern roundabouts were safer than conventional intersection control devices. In all situations roundabout reduced the number of traffic accidents. A conventional four (4) way intersection has thirty-two (32) vehicle-to-vehicle conflict points and twenty-four (24) vehicle-to pedestrian conflict points. With a modern roundabout it reduced vehicle-to-vehicle conflicts and vehicle-to pedestrian points down to eight (8). Deflextion of a roundabout reduces speed which resulted in less serious accidents.

The third question concerned modern roundabouts and weather or not they could handle the amount of traffic and level of service. Wilson Company has provided level of service analysis for all of these intersections. There were several examples of roundabouts in use or planned for construction in Lenexa, Overland Park and Olathe. The level of service or the capacity of a roundabout is greater than most realized because traffic moves continually in a roundabout. Bartlett said a modern roundabout was best described as an intersection control device rather than a traffic calming device because traffic calming was not its primary purpose. In other

communities that dealt with this issue, there were mixed feelings between different communities. The residents that lived around these projects like the roundabouts, but people who tend to drive faster did not like the roundabouts as much. Bartlett said there were videos available for the public to review concerning modern roundabouts in the City Commission Conference Room.

Dunfield said the additional information provided by staff and Wilson & Company was helpful.

Kennedy said if the Douglas County and City Planning Commission had seen the revised report on the Louisiana Traffic Calming.

Bartlett said no.

Bob Hagen, 926 W 28th Terrace, said he had been involved with the Louisiana Traffic Calming Study for two (2) years. The study represented a test case for the City. Where these ideas for roundabouts were advanced in other cities, there was a predictable pattern of public response. The first response was resistance from residents that did not live next to the effected street. The second response was acceptance of these roundabouts as an improvement and a more effective way of dealing with streets. A standard way of deciding whether to put a traffic calming device in a stretch of road was the number of accidents. Fortunately, Louisiana Street was not at that crisis stage. Development in the south part of Lawrence represented continual pressure on that street. One important aspect was access for the Park Hills Neighborhood which was on the east side of Louisiana Street. This neighborhood was much more severely effected by events taken place on Louisiana Street. This study should be regarded as a procedure and a set of ideas the City could apply as needed. He said sidewalks were important as a livability issue and effective monitoring to be able to identify trends and potential trouble spots before they become crisis.

Carol Bowen, 403 Dakota, said they organized the Neighborhood Associations between 19th Street and 31st Street on Louisiana to review this study. Design had been a problem both in the neighborhood's past and current state because of the cul-de-sac and dead end streets. She said the general public did not have an understanding of the problems that exist locally. She said they were not trying to cripple the City, but trying to keep the neighborhood functional if the City stays on course with a gradual plan.

Bill Douglas, 1215 West 29th Court, said his experience with roundabouts was in Avon, Colorado. Avon changed their traffic lights to roundabouts, which were two lanes around the roundabout and handled the traffic well. One of the problems on Louisiana Street was if the City wanted to slow down traffic with one lane around the roundabout like Monterey Way and Harvard Road, traffic would be slowed down which would move traffic on Louisiana, but the people coming into Louisiana from 27th Terrace, 27 Street or 25th Street would have a difficult time inching into the traffic to go around a roundabout. He said it was a horrible mistake and hoped the City would consider these kinds of problems.

Michael Pomes, 528 Kansas, said one of the consequences for putting in the roundabout especially going north of Park Hill Terrace was people would normally go southbound to Louisiana to access 31st Street may end up taking the route going from Vermont Street on to Kansas Street and then onto Park Hill Terrace which this route was currently preferred. He had a concern about traffic on Kansas Street.

Betty Alderson, 1920 Maine, said she had set in on study session concerning the Louisiana Traffic Calming Study at their Centennial Neighborhood Association. She said there were a lot of questions, but heard a lot of positive feed back concerning roundabouts.

Marsha Pomes, 528 Kansas, had a concern about the speed of traffic on Kansas Street.

Rundle asked about the packet of information from the Fire Marshall and wanted to know if they had accommodated emergency service vehicles in the design.

Bartlett said yes. Any roundabout that might be constructed had an engineering phase which would include all City Departments.

Henry had a concern about roundabouts. He said the roundabout at Monterey Way and Harvard works, but it was small and people had a difficult time using the roundabout.

Dunfield was excited about the concept of traffic calming and was pleased when the City actively looked into traffic calming issues in our neighborhoods. He was skeptical of roundabouts, but has become a preponderate of roundabouts because of the unbiased studies that indicated roundabouts slowed traffic, allowed traffic to flow more efficiently than traffic signals and 4-way stops and reduced accidents dramatically. Dunfield spoke of the report from the Insurance Institute for Highway Safety, an independent non-profit agency funded by insurance companies who clearly had no interest other than reducing accidents and injuries and the cost to insurance companies. The Institute funded a study of intersections in which roundabouts had recently been added in U.S. Cities which indicated a decrease in crashes, injury producing crashes, fatalities and delays in traffic could be reduced.

Rundle concurred that there was good research concerning roundabouts.

Kennedy concurred with Dunfield concerning the safety of roundabouts. He was not completely sold on roundabouts, but thought it was vital for the City to look at new responsible changes for our transportation plans.

Hodges commented on the cost of roundabouts. Roundabouts would be similar to the City prioritizing traffic control devices which would eventually appear on the budget on a regular phase basis.

The City Commission concurred to receive the report on the revised Louisiana Traffic Calming Study. Motion carried unanimously.

October 10, 2000 City Commission meeting minutes (Louisiana Traffic Calming)

Aaron Bartlet, Planner, presented the staff report on the recommendations from the Lawrence/Douglas County Metropolitan Planning Commission and Traffic Safety Commission regarding Louisiana Street Traffic Calming Report. The Traffic Safety Commission recommended proceeding with Phase I and Phase II of the program. This included the sidewalk along Louisiana Street between Park Hill Terrace and 18th Street and the roundabout at 27th Terrace and the School entrance. They recommended a before and after study be completed and reviewed by the Traffic Safety Commission prior to any additional phases initiated. Phase II, the roundabout, could be submitted for funding to KDOT under the scenic and environmental category of the Transportation Enhancement Program. The program required twenty percent (20%) matching funds. Applications were being taken for Fiscal Year 2003 sometime next year.

Hodges asked about the median treatment between 20th and 21st Streets which was a part of Phase III. He thought it might be good to try that particular improvement in that area.

Mike Wildgen, City Manager, said Phase I and Phase II were in the Capital Improvement Budget for the City.

Henry expressed a concern about the roundabout being at the entrance of the school with its heavy traffic flows.

Bartlet said the traffic circle would allow the flow of traffic through the area, which now stops. In reviewing similar situations, the concept appeared to work.

Betty Alderson supported the proposed improvements. She said roundabouts work and urged the City Commission to move forward with the project.

Moved by Dunfield, seconded by Kennedy, to direct staff to proceed with Phase I, sidewalk improvements, Phase II, roundabout at 27th Terrace, and the first part of Phase III, median improvements and direct staff to apply for appropriate funding from KDOT for these improvements. Motion carried unanimously.

Commissioner Shepard: We may want to take a month to think about it.

MOTION BY COMMISSIONER ANDERSON, SECONDED BY COMMISSIONER SLOAN, TO ACKNOWLEDGE RECEIPT AND TO TABLE THIS ITEM FOR ONE MONTH. THE MOTION WAS APPROVED, 6-0.

ITEM NO. 6: Review the Louisiana Street Traffic Calming Report and Proposed Traffic Calming Guidelines.

David Woosley advised that there is an addendum to the guidelines concerning fire routes.

Aaron Bartlett briefed the Commission on how the guidelines were put together.

Commissioner Anderson: I think it is a good starting point. I don't think it is all necessary, but I think it should be implemented in phases to see how it is received by the public.

Commissioner Sloan: I feel this is a little ambitious. I see it as an arterial street. We are here for traffic safety, but we are also here to make sure traffic moves.

Commissioner Henderson: I do not support the construction of three roundabouts. I would cautiously support the construction of one roundabout mid-way between 23rd Street and 31st Street. We should evaluate the success or failure of one before building any-more. I do not support the roundabout between Checkers and the Malls Shopping Center; traffic backs-up from the traffic signal into this area. If we build roundabouts, they should be built one at a time and evaluated before building another.

Commissioner Anderson: I would not advocate endorsing every-thing at once. We should select one or two items we think are more important to start with. I think the one at Checkers should be one of the first, or one by the schools at 19th Street or 27th Terrace.

Commissioner Sloan: The intersection of 27th Terrace & Louisiana Street would be the best location to begin.

Betty Alderson, 1920 Maine Street: The neighborhood is very much in favor of the project and very realistic that the whole pie is something that will have to be taken piece by piece. The proposal for the Malls entrance sounds like the most wonderful thing in the world to have traffic moving constantly. If you have never seen an area that has had them for years, go over and drive through the Potland district in Topeka; one of the very oldest districts in the community; the streets are much wider than anything we have here; they're absolutely beautiful; and they work like a charm. That neighborhood has stayed stable and is still one of the best areas in Topeka. Anyone who went to all of these meetings is very much in favor of this and willing to take it bite by bite.

MOTION BY COMMISSIONER ANDERSON, SECONDED BY COMMISSIONER SHEPARD, THAT THE TRAFFIC SAFETY COMMISSION ACCEPT THE REPORT AS PRESENTED, THAT THE CITY COMMISSION IMPLEMENT PHASES 1 AND 2 AT THIS TIME; AND THAT A BEFORE/AFTER STUDY BE COMPLETED AND REVIEWED BY THE TRAFFIC SAFETY COMMISSION BEFORE ANY ADDITIONAL PHASES ARE INITIATED. THE MOTION WAS APPROVED 6-0.

MOTION BY COMMISSIONER ANDERSON, SECONDED BY COMMISSIONER HENDERSON, TO TABLE THE PROPOSED GUIDELINES FOR ONE MONTH FOR A COMPREHENSIVE REVIEW. THE MOTION WAS APPROVED 6-0.

ITEM NO. 7: Miscellaneous

Commissioner Henderson suggested that the Commission consider holding public forums in the future on traffic issues.

Commissioner Shepard advised that there is a problem in Lawrence with drivers disobeying school bus red lights and stop arms.

Commissioner Henderson suggested that traffic fines in Lawrence need to be increased to help promote traffic safety.

Betty Alderson suggested that increased enforcement of the little laws would lead to a decrease in violations of the big laws.

The next scheduled meeting of the Traffic Safety Commission is Monday, October 2, 2000.

There being no further business, the meeting adjourned at 10:10 p.m.

Respectfully submitted,

David E. Woosley

David E. Woosley, PE
Transportation/Traffic Engineer

Memorandum
City of Lawrence
Department of Public Works

TO: David Corliss
Debbie Van Saun
FROM: Chuck Soules
CC: Terese Gorman, David Woosley
Date: November 23, 2004
RE: November 23, 2004 Agenda Item
19th & Louisiana

Please include the following item on the City Commission consent agenda for consideration at the November 16, 2004 meeting:

Project Description. This project would involve the construction of a roundabout at the intersection of 19th and Louisiana.

Project Description/History. The city hired Wilson & Company to conduct a traffic calming study for Louisiana Street between 19th and 31st. This study was completed in 2000 and involved many meetings for all the neighborhoods along this corridor. Eleven projects/recommendations were identified:

1. Roundabout at Louisiana Street and church/park entrance.
2. Roundabout at Louisiana Street and 27th Terrace/school entrance.
3. Roundabout at Louisiana Street and 27th Street.
4. Median treatment between 25th Street and Utah Street.
5. Roundabout at Louisiana Street and shipping strip mall entrance/Checkers grocery store.
6. Median treatment between 22nd Street and Greever Terrace.
7. Median treatment between 21st Street and 20th Street.
8. Median treatment between 20th Street and 19th Street.
9. Roundabout at Louisiana Street and 19th Street.
10. Roundabout at Louisiana Street and 17th Street.
11. Addition of sidewalk between Parkhill Terrace and 18th Street.

To date the City has completed items 4, 6, 7, 8, and 11.

Project Status. Letters will be mailed to local engineering consultants to solicit design proposals for this project.

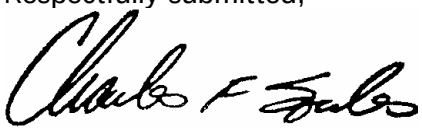
Project Details. The intersection will be designed for a roundabout and associated geometric improvements to replace the existing traffic signal. Neighborhood input will be requested. Both Centennial and University Place Neighborhood Associations were notified of this agenda item, as well as the school and Parks Department.

The Louisiana Street Traffic Calming Study can be accessed at http://www.lawrencepublicworks.org/pdf/louisana-traffic-study.tif.

Project Funding. Resolution 6478 was previously adopted by the City Commission on July 22, 2003 funding a portion of 19th and Louisiana along with 6th and Lawrence Avenue. 6th and Lawrence Avenue has been completed and approximately $65,000 remains for 19th and Louisiana. Also, Resolution No. 6571 is on this agenda to authorize issuing an additional $250,000 in bonds to fund these improvements. This amount was allocated in the Capital Improvement Budget for traffic signal renovations.

Action Request. Adopt Resolution No. 6571 authorizing the issuance of bonds in the amount of $250,000 to fund the construction of a roundabout and other necessary geometric improvements at 19th and Louisiana.

Respectfully submitted,



Charles F. Soules, P.E.
Director of Public Works

CFS/je

KANSAS

Driving Handbook

Prepared by

DRIVER'S LICENSE EXAMINING BUREAU

DE-9
(Rev. 5/03)

IMPORTANT INFORMATION

ROUNDABOUTS ARE COMING TO KANSAS

Modern roundabouts can improve safety, operation and aesthetics versus a standard intersection with STOP signs or traffic signals.

Modern roundabouts have the following characteristics:

- A central island
- A truck apron (designed for large trucks to put their rear tires on)
- Splitter islands
- A circular roadway on which all vehicles travel counter clockwise
- Slow speeds (15 mph to 25 mph)
- Yield signs at entry

On approaching the modern roundabout, yield to vehicles and bicyclists within the circulating roadway. Look to your left to see if there is an appropriate gap in traffic. If one is not available, you may need to stop. Always enter the roundabout to the right and proceed on the right side of the central island.

Within the modern roundabout, proceed slowly; don't try to pass bicyclists within the roundabout as your speeds should be nearly equal. Continue until you near your exit, at which time you should put on your right turn signal to tell drivers that you intend to exit.

On a multilane modern roundabout, do not overtake or pass any vehicles. Be prepared to yield to vehicles turning in front of you from the inside lane to exit the roundabout.

When there is more than one lane (two) entering a roundabout, use the following general rules to determine which lane you should be in (unless signs or pavement markings indicate otherwise):

- If you intend to exit the roundabout less than halfway around it, use the right lane.
- If you intend to exit the roundabout more than halfway around it, use the left lane.

Watch for pedestrians in or approaching the crosswalk and stop for them. This is important when entering or exiting the round about.

Do not enter a modern roundabout when an emergency vehicle is approaching on another leg. This will enable traffic already in the roundabout to clear in front of the emergency vehicle. When an emergency vehicle is approaching, in order to provide a clear path to turn through the roundabout, proceed to beyond the splitter island of your leg before pulling over.

IF YOU ARE INVOLVED IN AN ACCIDENT

1. Stop the car at once.
2. Render all aid possible to the injured. (a) Do not move the person unless it is absolutely necessary; (b) Check for breathing; (c) Stop severe bleeding; (d) Keep the person lying down; (e) Keep the person warm; (f) Send for an ambulance or a doctor.
3. The driver of a vehicle involved in an accident, resulting in injury to, or death of any person, or total property damage to an apparent extent of $500 or more, shall immediately, by the quickest means of communication, give notice of such accident to the local police department if such accident occurs within a municipality, otherwise to the office of the county sheriff or the nearest office of the state highway patrol.
4. Get the other person's driver license number, vehicle registration number, name, address and insurance company name and policy number. Give the other person the same information about yourself.
5. If you fail to produce evidence of insurance, you may be issued a citation at the scene of an accident.

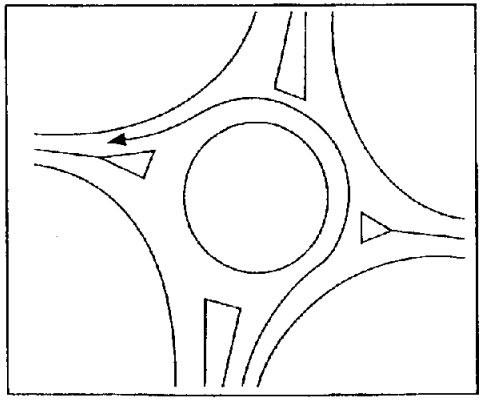
How To Drive A Roundabout

As you approach a roundabout you will see a YIELD sign and dashed yield limit line. Slow down, watch for pedestrians and bicyclists, and be prepared to stop if necessary. When you enter, yield to circulating traffic on the left, but do not stop if it is clear.

A conventional roundabout will have splitter islands on the approach to the intersection. They help guide traffic and indicate that you must drive to the right of the center island (mini-roundabouts usually do not have splitter islands, but you must still drive to the right of the center island.)

After passing the street prior to your exit, you should turn on your right-turn signal and watch for pedestrians and bicyclists as you exit.

Left-turns are completed by traveling around the center island.



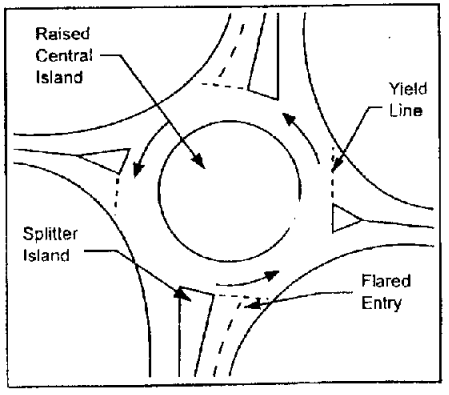
Citizen Concern

The City of Lawrence takes its role in solving traffic problems very seriously, yet the ultimate burden of safety rests with you, the motorist, cyclist, or pedestrian. Due to the number of citizen requests per year, we cannot always investigate your request as quickly as we would like to. However, we will respond after carefully evaluating your request. We appreciate your patience and

IF YOU HAVE QUESTIONS, REQUESTS OR SUGGESTIONS CONCERNING TRAFFIC ENGINEERING IN LAWRENCE, PLEASE CALL THE TRAFFIC ENGINEERING DIVISION AT 832-3034.

09 / 00

What You Need To Know About MODERN ROUNDABOUTS



TRAFFIC ENGINEERING DIVISION
CITY OF LAWRENCE

Roundabouts

Each year the City of Lawrence receives numerous requests from citizens to improve the safety of the streets on which they live. In an effort to find appropriate ways to deal with these concerns and make our residential areas more livable, the City has started considering the use of roundabouts.

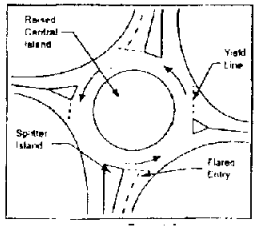
Modern roundabouts are relatively new to the United States, but they have been used throughout Europe, Australia and other countries to reduce crashes, injuries, traffic delays, fuel consumption, air pollution and construction costs, while increasing capacity and enhancing intersection beauty. They have also successfully been used to control traffic speeds in residential neighborhoods and are accepted as the safest type of intersection design.

A modern roundabout is a circular intersection similar to the traffic circle used previously in this country. The major differences between a traffic circle and a roundabout are:

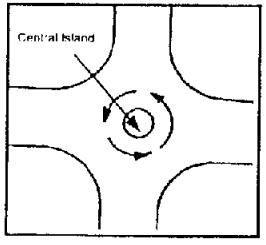
- **Yield at Entry:** At roundabouts the entering traffic yields the right-of way to the circulating traffic. This yield-at-entry rule keeps traffic from locking-up and allows free flow movement.
- **Deflection:** The entry and center island of a roundabout deflects entering traffic to slow traffic and reinforce the yielding process.

Types of Roundabouts

There are two basic types of modern roundabouts:



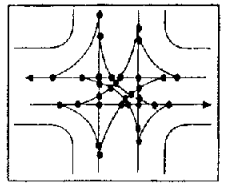
Conventional roundabout - A one-way circular roadway around a curbed central island for circulating traffic, usually with flared approaches. This type is constructed at the intersection of



Mini-roundabout - A one-way circular roadway around a raised central island of up to 30 feet in diameter, usually without flared entries. This type is constructed at the intersection of 18th Street & Sweetwater Court.

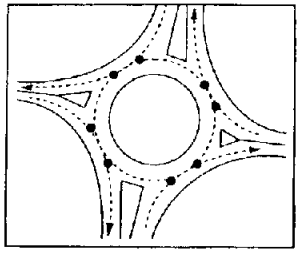
Why Use A Roundabout?

- **Safety** - Modern roundabouts have been shown to reduce injury-producing crashes by 76% and fatal or incapacitating injuries as much as 90% in the United States. The reduction in crashes is attributed to slower speeds and reduced number of conflict points.



Conflict points at a Standard Intersection

Conflict points at a Roundabout



- **Low Maintenance** - Eliminates maintenance costs associated with traffic signals which amount to approximately $3500 per year per intersection. In addition, electricity costs are reduced.
- **Reduced Delay** - By yielding at the entry rather than stopping and waiting for a green light, delay is significantly reduced.
- **Capacity** - Intersections with a high volume of left-turns are better handled by a roundabout than a multi-phased traffic signal.
- **Aesthetics** - A reduction in delay corresponds to a decrease in fuel consumption and air pollution. In addition, the central island provides an opportunity to provide landscaping.